

Appl. No. 10/648,457
Amdt. Dated December 22, 2005
Reply to Office Action of September 27, 2005

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the above-identified application:

Claim 1 (currently amended): A solenoid control valve for use in supplying pressure control to a gas turbine bleed valve, comprising:

a housing having a supply inlet, a major channel, a minor channel, and a vent;
a ball pilot valve disposed within said housing and movable between at least (i) a closed position, in which the supply inlet is in fluid communication with the minor channel, and the major channel is in fluid communication with the vent, and (ii) an open position, in which the supply inlet is in fluid communication with the major channel and the minor channel, and the major channel is not in fluid communication with the vent;
an activation arm moveably disposed within said housing, said activation arm configured to move said pilot ball valve between the open and closed positions;
a dual coil solenoid disposed within said housing, said solenoid adapted to receive a current and configured, upon receipt thereof, to move said activation arm to a position that moves said ball pilot valve to its open position;
biasing means positioned within said dual coil solenoid and configured to bias said ball pilot valve toward its closed position;
an actuator chamber in fluid communication with said housing via said minor channel and said major channel, said actuator chamber having a vent contact and a fill contact disposed therein, and further including a control port, and an outlet port; and
an actuator positioned within said actuator chamber, said actuator having a major surface coupled to a poppet that defines a minor surface, said poppet having a fill seat and a vent seat disposed thereon, the actuator movable between at least (i) first position, in which the poppet vent seat contacts the vent contact, and the minor channel, the actuator chamber, and the control part are in fluid communication with each other, and (ii) a second position, in which the poppet fill seat contacts the fill contact, and the control port and the outlet port are in fluid communication with each other, and the major channel, the

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minor channel, and the actuator chamber are each isolated from both the control port and the outlet port.

Claim 2 (previously presented): The solenoid valve of claim 1 wherein said major surface and minor surface are configured whereby fluid pressure admitted through said supply inlet passes through said major channel to act on said major surface and passes through said minor channel to act on said minor surface to cause movement of said actuator between the first and second positions.

Claim 3 (original): The solenoid valve of claim 2 wherein the movement of said actuator stops when said vent seat contacts said vent contact.

Claim 4 (original): The solenoid valve of claim 2 wherein the movement of said actuator opens fluid communication between said supply inlet and said control port.

Claim 5 (original): The solenoid valve of claim 1 wherein fluid pressure admitted through said supply inlet passes through said minor channel and is restricted from passing through said pilot ball valve so that fluid pressure acts on said minor surface of said actuator thereby to cause movement of said actuator.

Claim 6 (original): The solenoid valve of claim 5 wherein the movement of said actuator stops when said fill seat contacts said fill contact.

Claim 7 (original): The solenoid valve of claim 5 wherein fluid pressure acting against said major surface of said actuator is released through said vent of said housing.

Claim 8 (original): The solenoid valve of claim 5 wherein said control port and said outlet port of said actuator chamber are in fluid communication when said fill seat of said actuator contacts said fill contact.

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Claim 9 (original): The solenoid valve of claim 1 further comprises a filter to filter air admitted into said housing through said supply inlet.

Claim 10 (original): The solenoid valve of claim 1 wherein said pilot ball valve is configured so that when said dual coil is in the deenergized mode, said biasing means moves said arm against said ball thereby restricting fluid passage through said pilot ball valve.

Claim 11 (original): The solenoid valve of claim 1 wherein said pilot ball valve is configured so that when said dual coil is in the energized mode said ball is free to move within said pilot valve so that fluid pressure from said supply inlet causes said ball to move thereby permitting fluid passage through said pilot ball valve.

Claims 12-26 (canceled).

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